PORSF
2.1.1 V3

LWG
LOWER WILLAMETTE GROUP

Transmittal

To:	Chip Humphrey Eric Blischke US Environmental Protection Agency, 805 SW Broadway, Suite 500 Portland, OR 97205	**From:**	Gene Revelas Integral Consulting, Inc. 7900 SE 28th Street, Suite 300 Mercer Island, WA 98040
		Date:	November 6, 2007
Re:	Portland Harbor RI/FS	**Copies to:**	Distribution

We are sending the following items:

Number of Copies	Description
22	Portland Harbor RI/FS Response to EPA comments on: Erosion Core Sediment Evaluation and Field Sampling Plan Technical Approach Upriver and Multnomah Channel Sediment Evaluation and Field Sampling Plan Technical Approach

These are transmitted:

☐ For your information ☐ For action specified below ☒ For review and comment ☐ For your use ☐ As requested

Comments:

Distribution

Jim Anderson, ODEQ
Kristine Koch, USEPA
Dana Davoli, USEPA
Ted Buerger, USFWS
Robert Neely, NOAA
Brian Cunninghame, Confederated Tribes of Warm Springs
Jeff Baker, Confederated Tribes of Grand Ronde
Tom Downey, Confederated Tribes of Siletz
Audie Huber, Confederated Tribes of Umatilla
Erin Madden, Nez Perce Tribe
Patti Howard, Columbia River Inter Tribal Fish Council
Valerie Oster, LWG Library Repository
David Ashton, Port of Portland
Jim McKenna, Port of Portland
Robert Wyatt, Northwest Natural
Rick Kepler, Oregon Dept. of Fish & Wildlife
Sheila Fleming, RIDOLFI Inc.

COMMENT NO.	EPA COMMENTS	LWG Response
G.1	Overall, EPA supports the approach developed by the LWG to characterize sediments within the upper portion of Multnomah Channel and the upriver reach of the Willamette River. In particular, EPA agrees that further characterization of sediments within the upriver reach will help in the determination of background sediment concentrations for the Portland Harbor RI/FS.	LWG acknowledges the comment.

COMMENT NO.	EPA COMMENTS	LWG Response
S.1	**Section 1.0 – Upriver Sampling Approach:** While EPA concurs with the 1994 EPA reference document as cited in this section, recent EPA guidance (ProUCL 4.0 User Guide, USEPA, April 2007) states that "background evaluation studies, BTVs (background threshold values), and not-to-exceed values should be estimated based upon defensible background data sets." In addition, the guidance states that "if enough site and background data are available, two-sample hypotheses testing approaches are used to compare site concentrations with background concentrations levels. These statistical methods can also be used to compare contaminant concentrations of two site AOCs (areas of concern)." EPA believes that the upstream data set will be sufficient to perform hypothesis testing using ProUCL or other similar statistical packages and recommends this approach.	LWG appreciates the comment and will consider it in the analysis of upriver sediment concentrations. Further discussions of statistical methods should be conducted once the data are in.

COMMENT NO.	EPA COMMENTS	LWG Response
S.2	**Section 1.4 – Upriver Sample Locations:** This section states that the mean grain size for the Study Area is 53% fines and that this percentage will be the target minimum percent fines for samples collected in the upriver evaluation. EPA disagrees with this restriction. It is more appropriate to target a grain size distribution that mimics the grain size distribution within the Portland Harbor Study Area. This will ensure a representative upriver data set.	The FSP includes an analysis of the grain-size distribution for the Study Area and for the existing samples in the Upriver reach. These distributions are significantly different, with the Upriver area characterized by fewer percent fines as expected. The number of upriver samples needed to match the Study Area distribution quartiles have been identified, and samples will be selected to match this distribution to the extent possible.
S.3	The LWG identified 12 depositional areas for the collection of sediment samples. The LWG proposed performing grain size analysis and based on the results of the grain size analysis submitting up to three samples from each area for chemical analysis with a total of 20 samples. EPA recommends collecting 2 – 3 samples from each area for chemical analysis for a total of 24 – 36 samples. Samples should be selected following grain size analysis and consultation with EPA to ensure a representative distribution of grain sizes and an adequate spatial distribution of sediment chemistry analyses.	LWG will attempt to collect 2-3 samples from each of the areas identified. In order to obtain a representative distribution for the PH area, however, it is likely that not all samples will be selected for analysis. The objective is to submit between 24 and 36 samples for analysis.

COMMENT NO.	EPA COMMENTS	LWG Response
S.4	As EPA stated in our June 8, 2007 Round 3B Data Gaps letter, EPA is collecting sediment data between RM 22 and 29 in conjunction with site assessments being performed at the Blue Heron and West Linn paper mills. This data should be used as part of the upriver evaluation.	Consistent with the approach LWG developed for the Upriver reach, samples collected near sources associated with these sites should be considered for exclusion from the background data set. Based on the Work Plan reviewed by LWG, some of these sampling locations appear to be near contaminant sources associated with these two sites.
S.5	The evaluation presented in Figure 4 demonstrates that the plot of UCL/mean vs. Sample Size becomes asymptotic once the total sample size reaches 40 to 50 samples. Considering the samples collected by the LWG during Round 2 (18 sediment samples), the 24 – 36 additional samples proposed by EPA, the sediment data recently collected by EPA during the Blue Heron and West Linn paper mills site investigation and allowing for outliers, a total upriver sample size in the range of 50 – 60 samples should be adequate for a complete and thorough analysis of upriver sediment concentrations.	LWG appreciates the comment and will consider it in the analysis of upriver sediment concentrations.

COMMENT NO.	EPA COMMENTS	LWG Response
S.6	Existing data collected in the upriver reach have PCB detection limits of up to 20 ug/kg. Sediment samples collected the LWG as part of Round 2 ranged from 2 to 5 ug/kg. It is critical that the upriver evaluation not be biased by the inclusion of samples with unacceptable detection limits. A minimum detection limit for including data in the data set should be established. EPA recommends that the minimum detection limit be established between 2 and 5 ug/kg. In addition, statistical tests that consider the distribution of the data set should be applied to identify outliers in the data set. Because of the potential for contamination associated with specific sources, statistical outliers should not be included in the data set.	LWG appreciates the comment and will consider it in the analysis of upriver sediment concentrations.

COMMENT NO.	EPA COMMENTS	LWG Response
S.7	Specific Comments – Multnomah Channel: In general, the proposed sampling locations are acceptable. However, EPA would like to collect sediment cores in a manner similar to the sediment cores that were collected downstream of RM 2 in the mainstem Willamette River. Five of the ten proposed locations should be converted from surface grabs to 14' sediment cores. EPA requests that the following five surface grab locations be converted to sediment cores: MC-02, MC-03, MC-05, MC-09 and MC-10.	The Sediment FSP incorporates this modification.

COMMENT NO.	EPA COMMENTS	LWG Response
G.1	Overall, EPA supports the approach developed by the LWG to characterize sediments within the upper portion of Multnomah Channel and the upriver reach of the Willamette River. In particular, EPA agrees that further characterization of sediments within the upriver reach will help in the determination of background sediment concentrations for the Portland Harbor RI/FS.	LWG acknowledges the comment.

COMMENT NO.	EPA COMMENTS	LWG Response
S.1	**Section 1.0 – Upriver Sampling Approach:** While EPA concurs with the 1994 EPA reference document as cited in this section, recent EPA guidance (ProUCL 4.0 User Guide, USEPA, April 2007) states that "background evaluation studies, BTVs (background threshold values), and not-to-exceed values should be estimated based upon defensible background data sets." In addition, the guidance states that "if enough site and background data are available, two-sample hypotheses testing approaches are used to compare site concentrations with background concentrations levels. These statistical methods can also be used to compare contaminant concentrations of two site AOCs (areas of concern)." EPA believes that the upstream data set will be sufficient to perform hypothesis testing using ProUCL or other similar statistical packages and recommends this approach.	LWG appreciates the comment and will consider it in the analysis of upriver sediment concentrations. Further discussions of statistical methods should be conducted once the data are in.

COMMENT NO.	EPA COMMENTS	LWG Response
S.2	**Section 1.4 – Upriver Sample Locations:** This section states that the mean grain size for the Study Area is 53% fines and that this percentage will be the target minimum percent fines for samples collected in the upriver evaluation. EPA disagrees with this restriction. It is more appropriate to target a grain size distribution that mimics the grain size distribution within the Portland Harbor Study Area. This will ensure a representative upriver data set.	The FSP includes an analysis of the grain-size distribution for the Study Area and for the existing samples in the Upriver reach. These distributions are significantly different, with the Upriver area characterized by fewer percent fines as expected. The number of upriver samples needed to match the Study Area distribution quartiles have been identified, and samples will be selected to match this distribution to the extent possible.
S.3	The LWG identified 12 depositional areas for the collection of sediment samples. The LWG proposed performing grain size analysis and based on the results of the grain size analysis submitting up to three samples from each area for chemical analysis with a total of 20 samples. EPA recommends collecting 2 – 3 samples from each area for chemical analysis for a total of 24 – 36 samples. Samples should be selected following grain size analysis and consultation with EPA to ensure a representative distribution of grain sizes and an adequate spatial distribution of sediment chemistry analyses.	LWG will attempt to collect 2-3 samples from each of the areas identified. In order to obtain a representative distribution for the PH area, however, it is likely that not all samples will be selected for analysis. The objective is to submit between 24 and 36 samples for analysis.

COMMENT NO.	EPA COMMENTS	LWG Response
S.4	As EPA stated in our June 8, 2007 Round 3B Data Gaps letter, EPA is collecting sediment data between RM 22 and 29 in conjunction with site assessments being performed at the Blue Heron and West Linn paper mills. This data should be used as part of the upriver evaluation.	Consistent with the approach LWG developed for the Upriver reach, samples collected near sources associated with these sites should be considered for exclusion from the background data set. Based on the Work Plan reviewed by LWG, some of these sampling locations appear to be near contaminant sources associated with these two sites.
S.5	The evaluation presented in Figure 4 demonstrates that the plot of UCL/mean vs. Sample Size becomes asymptotic once the total sample size reaches 40 to 50 samples. Considering the samples collected by the LWG during Round 2 (18 sediment samples), the 24 – 36 additional samples proposed by EPA, the sediment data recently collected by EPA during the Blue Heron and West Linn paper mills site investigation and allowing for outliers, a total upriver sample size in the range of 50 – 60 samples should be adequate for a complete and thorough analysis of upriver sediment concentrations.	LWG appreciates the comment and will consider it in the analysis of upriver sediment concentrations.

COMMENT NO.	EPA COMMENTS	LWG Response
S.6	Existing data collected in the upriver reach have PCB detection limits of up to 20 ug/kg. Sediment samples collected the LWG as part of Round 2 ranged from 2 to 5 ug/kg. It is critical that the upriver evaluation not be biased by the inclusion of samples with unacceptable detection limits. A minimum detection limit for including data in the data set should be established. EPA recommends that the minimum detection limit be established between 2 and 5 ug/kg. In addition, statistical tests that consider the distribution of the data set should be applied to identify outliers in the data set. Because of the potential for contamination associated with specific sources, statistical outliers should not be included in the data set.	LWG appreciates the comment and will consider it in the analysis of upriver sediment concentrations.

COMMENT NO.	EPA COMMENTS	LWG Response
S.7	Specific Comments – Multnomah Channel: In general, the proposed sampling locations are acceptable. However, EPA would like to collect sediment cores in a manner similar to the sediment cores that were collected downstream of RM 2 in the mainstem Willamette River. Five of the ten proposed locations should be converted from surface grabs to 14' sediment cores. EPA requests that the following five surface grab locations be converted to sediment cores: MC-02, MC-03, MC-05, MC-09 and MC-10.	The Sediment FSP incorporates this modification.